This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (cancelled)

2. (currently amended) A method of reducing insulin resistance in a mammalian patient suffering therefrom comprising administering an effective amount of an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium.

3. (previously presented) The method of claim 2 wherein the insulin resistance is at least partially the result of inadequate levels of acetylcholine in the patient's hepatic parasympathetic nerve synapses.

4. (cancelled)

5. (currently amended) A method of increasing skeletal muscle glucose uptake in a mammalian patient comprising administering an effective amount of an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium.

6. (previously presented) The method of claim 5, wherein the patient suffers from suboptimal hepatic regulation of blood glucose levels.

7. (cancelled)

8. (previously presented) The method of claim 2 wherein the patient is a human.

9. (currently amended) A pharmaceutical composition comprising ~~a suitable~~ an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium and at least one other drug used in the treatment of diabetes.

10. (original) The composition of claim 9 further including a pharmaceutically acceptable liver-targeting substance.

11. (cancelled)

12. (previously presented) The composition of claim 9 wherein the other drug comprises at least one of insulin, insulin analogues, sulfonylurea agents, tolbutamide, acetohexamide, tolazamide, chiorpropamide, glyburide, glipizide, glimepiride, biguanide agents, metformin, alpha-glucosidase inhibitors, acarbose, miglitol, thiazolidinedione agents (insulin sensitizers), rosiglitazone, pioglitazone, troglitazone, meglitinide agents, repaglinide, phosphodiesterase inhibitors, anagrelide, tadalafil, dipyridamole, dyphylline, vardenafil, cilostazol, milrinone, theophylline, sildenafil, caffeine, cholinergic agonists, acetylcholine, methacholine, bethanechol, carbachol, pilocarpine hydrochloride, nitric oxide donors, products or processes to increase NO synthesis in the liver, SIN-1, molsidamine, nitrosylated N acetylcysteine, nitrosylated cysteine esters, nitrosylated L-2-oxothiazolidine-4-carboxolate (OTC), nitrosylated gamma

glutamylcystein and its ethyl ester, nitrosylated glutathione ethyl ester, nitrosylated glutathione isopropyl ester, nitrosylated lipoic acid, nitrosylated cysteine, nitrosylated cystine, nitrosylated methionine, S-adenosylmethionine, products or processes to reduce the rate of NO degradation in the liver, products or processes to provide exogenous NO or an exogenous carrier or precursor which is taken up and releases NO in the liver, antioxidants, vitamin E, vitamin C, 3-morpholinosyndnonimine, glutathione increasing compounds, N-acetylcysteine, cysteine esters, L-2-oxothiazolidine-4-carboxolate (OTC), gamma glutamylcystein and its ethyl ester, glutathione ethyl ester, glutathione isopropyl ester, lipoic acid, cysteine, cystine, methionine, and 5-adenosylmethionine.

13. (previously presented) The composition of claim 10 wherein the liver-targeting substance comprises at least one of albumin, bile salts and liposomes.

14. (currently amended) A kit comprising:
an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigme, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium, in a pharmaceutically acceptable carrier; and
instructions for the administration of the acetylcholine esterase antagonist to reduce insulin resistance in a mammalian patient.

15. (original) The kit of claim 14 further comprising means to administer the acetylcholine esterase antagonist.

16. (cancelled)

17. (currently amended) A method of amplifying the effect of the hepatic parasympathetic reflex on skeletal muscle insulin sensitivity comprising administering an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium.

18. (currently amended) A method of increasing glucose uptake by skeletal muscle of a patient suffering from suboptimal hepatic regulation of blood glucose levels, comprising administering ~~a suitable~~ an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium.

19. (currently amended) A method of reducing insulin resistance in a mammalian patient comprising administering ~~a suitable~~ an acetylcholine esterase antagonist selected from the group consisting of donepezil, galanthamine, rivastigmine, tacrine, physostigmine, neostigmine, edrophonium, demecarium, pyridostigmine, phospholine, metrifonate, zanapezil, and ambenonium, wherein said patient suffers from inadequate levels of acetylcholine in the hepatic parasympathetic nerve synapses.

20. (cancelled)

21. (previously amended) The method of claim 2 wherein the acetylcholine esterase antagonist is targeted to the liver.

22. (currently amended) The method of claim 21 wherein the acetylcholine esterase antagonist is targeted to the liver using albumin.

23. (currently amended) The method of claim 21 wherein the acetylcholine esterase antagonist is targeted to the liver using a plurality of liposomes.

24. (currently amended) The method of claim 21 wherein the acetylcholine esterase antagonist is targeted to the liver using bile salts.

25. (currently amended) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by intravenous administration.

26. (currently amended) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by transdermal administration.

27. (currently amended) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by oral administration.

28. (currently amended) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by ~~intra peritoneal~~ intraperitoneal administration.

29. (previously presented) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by portal vein injection.

30. (previously presented) The method of claim 2 wherein the acetylcholine esterase antagonist is administered by immobilization of the acetylcholine esterase antagonist on a solid support and implantation of the support adjacent the patients liver.

31. (previously presented) The method of claim 2 wherein the patient suffers from at least one of chronic liver disease, chronic hypertension, type II diabetes, fetal alcohol syndrome, gestational diabetes, age-related insulin resistance, and hepatic nerve damage.

32. (previously presented) The method of claim 5 wherein the patient is a human.

33. (previously presented) The method of claim 2 wherein the insulin resistance is hepatic insulin sensitizing substance-dependent insulin resistance.

34. (cancelled)

35. (cancelled)

36. (previously presented) The method of claim 2 wherein the patient suffers from suboptimal hepatic regulation of blood glucose levels.

37-42. (cancelled)

43. (new) The method of claims 2, 5, 17, 18, or 19 wherein the acetylcholine esterase antagonist is neostigmine.

44. (new) The composition of claim 9, wherein the acetylcholine esterase antagonist is neostigmine.

45. (new) The kit of claim 14, wherein the acetylcholine esterase antagonist is neostigmine.